1. Nov/2021/Paper_23/No.2

(a) State what is meant by *work done*.

.....

..... [1]

(b) Use your answer in **(a)** to show that the SI base units of energy are $kg\,m^2\,s^{-2}$.

[1]

(c) A metal rod is heated at one end so that thermal energy flows to the other end. The thermal energy E that flows through the rod in time t is given by

$$E = \frac{cA(T_1 - T_2)t}{L}$$

where A is the cross-sectional area of the rod,
T_1 and T_2 are the temperatures of the ends of the rod,
L is the length of the rod,
and c is a constant.

Determine the SI base units of c.

SI base units ..... [3]

[Total: 5]

2. March/2021/Paper_22/No.1a

(a) Complete Table 1.1 by stating whether each of the quantities is a vector or a scalar.

Table 1.1

quantity	vector or scalar
acceleration	
power	
work	

[2]